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**(54) RECOVERY OF AVAILABLE COMPONENT IN
HIGH TEMPERATURE GAS**

discharged out of the system through a mist separator 3.

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(57) Abstract:

PURPOSE: To reduce production cost by eliminating necessity for using a heat resistance material in a packed tower itself if only a duct is made of a heat resistant material, by cooling high temp. gas by spraying a part of a recirculation liquid to the duct on this side of the high temp. gas introducing port of the packed tower.

CONSTITUTION: For example, when SO_2 being the available component in the high temp. gas generated in the waste liquid treatment process of an atomic power plant is recovered as sulfuric acid through the reaction with H_2O_2 , a H_2O_2 solution is sprayed into a packed tower 1 and a duct 9 from first and second spray nozzles 8, 11 by a recirculation pump 7 through first and second recirculation pipes 6, 12. SO_2 -containing high temp. gas is introduced into the duct 9 and cooled by the H_2O_2 solution. The gas, from which SO_2 is recovered to a certain degree through the reaction with H_2O_2 in the duct 9, is further reacted with the H_2O_2 solution in the packed tower 1 and recovered as sulfuric acid. The residual gas, from which SO_2 is recovered, is

